



**UNITED STATES DEPARTMENT OF  
COMMERCE**

**National Oceanic and Atmospheric  
Administration**

National Weather Service

National Centers for Environmental  
Prediction

5200 Auth Road

Camp Springs, Maryland 20746

Telephone: 301-763-8000

April 25, 2005

W/NP52

Antonio J. Busalacchi  
Director, Earth System Science Interdisciplinary Center

Dear Tony,

On behalf of the CTB Management Team, I want to thank you and the SAB for the thoughtful advice to the CTB following the 14 February Conference Call. The CTB Management Team (Higgins, Pan, Ji, Lord, Laver, Mo) held a meeting on 28 March to discuss this feedback in detail. Based on those discussions, and in coordination with the CTB Oversight Board, I want to take this opportunity to provide you with a formal reply detailing specific CTB actions and further clarification on some of the issues you raised.

**Science Plan and Priorities**

(1) We agree that the CTB needs a comprehensive Science and Transition Plan. There is a consensus that, given the uncertainty of future CTB resources, a comprehensive implementation plan is premature. CTB implementation during FY05 is primarily "internal", and consists of redirected NCEP personnel (CPC and EMC) on internal transition projects (CFS assessments, multi-model ensembles and climate products and applications). NCEP has also dedicated on the order of 1/3<sup>rd</sup> of the "red" research supercomputer for all non-operational climate related projects including the CTB (see "Computing and Data Access" discussion below).

Wayne Higgins (CTB Director) will take the lead on a draft CTB Science and Transition Plan that will include:

- CTB Mission and Goals;
- CTB Science Priorities and Science Guidance for OGP Solicitations;
- "Transition from Research to Operations" Plan;
- CTB "Competitive Transition Project" Review Policy and the "Computer Resources" Review Policy;
- CTB Annual Operating Plan;
- CTB Data Access Policy;
- CTB FY07-FY11 Milestones;
- CTB Expected Outcome and Performance Measures.

The Science and Transition Plan will also discuss (i) the relative balance of CTB infrastructure (includes human infrastructure for system and science support) and science activities focused on the improvement of S/I forecasts; (ii) the distinction between CTB activities and normal model

development activities; (iii) the distinction between near-term and long term CTB transition projects; (iv) the extent to which the CTB should focus on improvements to the CFS –vs– multi-model ensemble efforts; (v) how substantively to involve models from outside NCEP; (vi) the relative balance of activities / responsibilities that belong to the home institution vs activities that are the responsibility of the CTB.

The Science and Transition Plan will be a living document and will evolve to a Science and Implementation Plan updated on an annual basis in concert with the NOAA Annual Operations Plan and related priorities established by the Climate Goal Team. The Science and Transition Plan will appear on the upgraded CTB web page, and CTB management will notify the OB, SAB and CST when an initial draft is available for comment.

We recommend that a review of the Science and Transition Plan be carried out by the SAB in advance of the CTB Annual Meeting in October 2005, and thereafter on an annual basis prior to the autumn general meeting. The OB Chair will ask the OB to review the plan in early summer 2005, and there will be an upcoming request for a SAB review shortly thereafter. Any findings should be shared with the research community as part of a review of the progress of the previous year toward the goals of the science plan and to openly discuss the foci for the next year.

(2) We agree that the CTB needs to have an intimate link between science priorities, NOAA requirements, and resources. CTB science priorities are established by CTB management in consultation with the CST, OB and SAB. Current CTB science projects (CFS assessments, multi-model ensembles, climate products and applications) are primarily internal and carried out by reallocated NCEP personnel. We recommend that current CTB science priorities be carried over to CTB competitive transition projects in the FY 06 Announcement of Opportunity (AO). In addition, there are pressing needs for the CTB to enhance its human infrastructure by establishing “System and Science Support Teams” and to begin a “Visiting Scientist Program” to engage and support the external community in advance of CTB competitive transition projects. Current CTB personnel are working on short-term CTB transition projects with near-term payoff for NCEP climate forecast operations. Additional personnel are needed for computing support, system administration, data management, software (models and data sets) support, and scientific collaboration for the long-term competitive transition projects led by the external research community. This issue is partly addressed in the FY07 NOAA budget request for the CTB, which includes requests for:

- “Infrastructure” for System and Science Support Teams, and a “Visiting Scientist Program” to enhance scientific collaboration with the research community; and
- (Competitive) “Transition Projects” via annual Announcements of Opportunity.

We strongly recommend that CTB needs for human infrastructure be addressed in FY06, in advance of the anticipated major ramp-up of competitive transition projects in FY07. In particular, we recommend that FY06 funds from the NOAA Climate Program/OGP should include support for NCEP to establish these teams. CTB management agrees that these enhancements should be a fraction on the order of 1/3<sup>rd</sup> of the total support available in the FY06 AO. Additional advice from the SAB on the appropriate balance of CTB infrastructure and science (e.g. 1/3<sup>rd</sup> infrastructure and 2/3<sup>rd</sup> science) to carry out the competitive transition projects is especially welcome.

## **Computing and Data Access**

(1) A policy on how computing resources are allocated for externally funded NCEP projects “that are not part of the CTB but part of climate” has been developed. An NCEP Computing Resource Board has been organized, consisting of the NCEP/NCO Director (Kevin Cooley), the NOAA Environmental Modeling Program manager (Fred Toepfer), and the NCEP/EMC Director (Steve Lord; representing all users). This board will oversee NCEP computing resource policies. One third of the NCEP “red” computer resource is for all “climate” (non-operational development) activities. Thus, the CTB will have to share resources with other internally or externally funded climate projects on the “red” computer. At present, there is no explicit partition of the 1/3 of “red” for CTB and “other climate” projects. We recommend that the CTB “Computer Resources” review policy (Kingtse Mo has drafted this and is currently circulating it) be used as a basis for allocation of computing resources for the entire 1/3 of the “red” research computer for all “climate” related projects. Annually, all climate projects, CTB or otherwise, including prospective proposals to be submitted for external funding competition, should submit a project abstract and computing resource estimates for review and allocation. Any prospective projects that were allocated computing resources but eventually failed in competition for external funding, will forfeit their computing resource allocation. Any “freed up” computing resources will be distributed to “funded” projects.

(2) The CTB “Competitive Transition Project” review policy and “Computer Resources” review policy establish the process that will be used for evaluating prospective CTB transition projects and the allocation of CTB computing resources. The policies also clarify the role of the CST, including the CST chair, in evaluating/recommending the allocation of computing resources. The policies will be posted on the CTB webpage, and included in the Science and Transition Plan.

(3) The CST will develop a process for sharing CTB baseline data sets (e.g. CFS hindcasts) and future development plans. The CST will seek input from the community, including members of the SAB for this. The SAB will review/comment on the draft process/plan from CST. Consistent with this, we would appreciate additional advice from the SAB on the commitment of CTB infrastructure for near and mid-term storage for online access, which is lacking at NCEP at this time.

### **Conflict of Interest**

(1) There is a consensus that SAB and OB members should be encouraged to submit proposals for competitive CTB transition projects. We also agree that the role of the SAB is to advise on broad policy issues and scientific directions, and hence that individual members can recuse themselves where conflicts of interest arise.

(2) The composition of the CST will naturally evolve to include more outside members from the peer-review competitive proposal process as the number of competitive transition projects increases. There was a pressing need to “jump start” CTB internal activities by organizing the CST early. The team has been very active, with several excellent conference calls, that are helping with scientific direction for the CTB. The current CST chair has been an outstanding advocate for CTB computing policies. We will continue to discuss the CST at future CTB Management Team meetings, and welcome additional advice from the SAB on this.

### **Community Involvement and Linkages**

(1) As described above, there are pressing needs for the CTB to build System and Science Support Teams and to begin a Visiting Science Program to engage and support the external community.

These so called “internal human resources” are partly addressed in the FY07 NOAA budget request, but we strongly advocate SAB advice on CTB needs for additional human infrastructure in FY06.

(2)There is a proposal for the GAPP-core project (Ken Mitchell, PI) to come onto the CTB as a ready-made Climate Process Team (CPT) for land. In particular, the NOAH land surface model will be coupled to the CFS. GLDAS would be used for select hindcasts. The fully coupled CFS would be used for drought monitoring and prediction in support of NIDIS. We agree that the water sector is one of the main areas that would benefit from better climate forecasts, and hence are engaging OHD and other stakeholders in this process.

(3)There is a consensus that the SAB membership should include the private sector and additional international participation. The SAB Chair should select future SAB members in consultation with other SAB members, and the OB.

Best Regards,

Jim Laver  
Director, Climate Prediction Center  
NOAA/NWS/NCEP